POLYNOMIALS

- **Definition**: _____
- **Standard Form**: _____

  _____
- **Example**: $2x^3 + 5x^2 - 4x + 7$ *** The highest exponent is called the _____.**
- **Classifying Polynomials**: All polynomials are classified by **degree** and **number of terms.**

DEGREE	
0	Constant
1	Linear
2	Quadratic
3	Cubic
4	Quartic

NUMBER OF TERMS	
1	Monomial
2	Binomial
3	Trinomial
4 or more	Polynomial

Classify the following polynomials by degree and number of terms.

1. 6 **1.** _____

2. -2x **2.** _____

3. 7x + 1 **3.** _____

4. $x^2 + 2x - 5$ **4.** _____

5. $4x^3 - 8$ **5.** _____

6. $2x^4 - 7x^2 - 5x + 1$ **6.** _____

Write the following polynomials in standard form.

7. $3x + 1 + 2x^2$ **7.** _____

8. $x^2 + 64 - x + 7x^3$ **8.** _____

9. $x^3 + 5x^2 + 28 - x$ **9.** _____

10. $24 - x^3 + x$ **10.** _____

11. $2ab + a^3 + 5a^2b^2 - 2b^3$ **11.** _____

12. $13 - x^3 + 5y^3 - 7x^2y^2$ **12.** _____

Name: _____ **Unit 7:** Polynomials & Factoring

Date: _____ **Bell:** _____ **Homework 1:** Classifying Polynomials; Adding & Subtracting Polynomials

Directions: Classify the following polynomials by degree and number of terms.	
1. $3x + 12$	**2.** $-7x^2 + 4x - 1$
3. $x^3 - 8$	**4.** 24
5. $2x^4 - x^3 + 5x^2 + x - 7$	**6.** $10x$

Directions: Write the following polynomials in standard form.	
7. $y^2 + 3y^4 - 7y + 2y^3 - 4$	**8.** $9x^4 - 2x^2 + 7x - 8x^3 + x^5 - 4$
9. $-2b^2 + 5ab + 7a^2$	**10.** $-3m^2n^2 + 8mn^3 + m^3n$

Directions: Find the sum/difference. **Answers must be in standard form.**	
11. $(x^2 - 4x + 3) + (3x^2 - 3x - 5)$	**12.** $(8x^2 - 12x + 4) - (3x^2 + 5x - 1)$
13. $(2x - 3 + 7x^2) - (3 - 9x^2 - 2x)$	**14.** $(7x^2 + 3x) - (5x^2 + 4)$
15. $(3x^2 - x + 3) + (4x^2 - 5)$	**16.** $(5x^3 - x + 2x^2 + 4) + (3x^2 + 1 - 4x)$
17. $(2x^2 + 3y^2 - z^2) - (x^2 - y^2 - z^2) + (4x^2 - 3y^2)$	**18.** $(12 + 8x^3 + 3x - 4x^2) + (5x^3 + 15 - x + 2x^2)$
19. Find the sum of $2x^2 - 6x - 2$ and $x^2 + 4x$	**20.** Subtract $-a^2 - 5ab + 3b^2$ from $3a^2 - 2ab + 3b^2$